

Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims:

1. (Currently Amended) A system comprising:  
a frequency-stepped radar configured to induce vibrations in a landmine using different frequencies;  
a sensor configured to detect electromagnetic signals associated with the vibrations; and  
a processor configured to process the signals to detect the landmine.
  
2. (Currently Amended) A method comprising:  
using a frequency-stepped radar to sequentially induce vibrations of different frequencies in a landmine;  
detecting electromagnetic signals associated with the vibrations; and  
processing the signals to detect the landmine.
  
3. (New) The method of claim 2 wherein processing the signals to detect the landmine comprises removing, from the detected signals, signal components related to frequency clutter that is not associated with a buried landmine.
  
4. (New) The method of claim 2 wherein processing the signals to detect the landmine comprises processing detected signals from all frequencies to reduce speckle effects.
  
5. (New) The method of claim 2 wherein processing the signals to detect the landmine comprises measuring a peak of a processed signal to determine vibration displacement.

6. (New) The method of claim 5 further comprising converting the determined vibration displacement to an audible signal.

7. (New) The method of claim 5 wherein processing the signals to detect the landmine comprises identifying whether the determined vibration displacement is consistent with a landmine.

8. (New) The method of claim 7 wherein identifying whether the determined vibration displacement is consistent with a landmine comprises:

comparing the determined vibration displacement with a previously determined vibration displacement; and

identifying that the determined vibration displacement is consistent with a landmine in response to a result of the comparison that exceeds a threshold difference.

9. (New) The method of claim 2 further comprising presenting an audible signal when a landmine is detected.

10. (New) The system of claim 1 further comprising a metal detection sensor configured to detect metal.

11. (New) The system of claim 1 wherein the processor is further configured to remove, from the detected signals, signal components related to frequency clutter that is not associated with a buried landmine.

12. (New) The system of claim 1 wherein the processor is further configured to process detected signals from all frequencies to reduce speckle effects.

13. (New) The system of claim 1 wherein the processor is further configured to measure a peak of a processed signal to determine vibration displacement.

14. (New) The system of claim 13 the processor is further configured to convert the determined vibration displacement to an audible signal.

15. (New) The system of claim 13 the processor is further configured to identify whether the determined vibration displacement is consistent with a landmine.

16. (New) The system of claim 15 wherein the processor is further configured to:  
compare the determined vibration displacement with a previously determined vibration displacement; and  
identify that the determined vibration displacement is consistent with a landmine in response to a result of the comparison that exceeds a threshold difference.

17. (New) The system of claim 1 the processor is further configured to present an audible signal when a landmine is detected.